

In the Claims:

1-5. Canceled.

6. (Previously presented) A method, comprising:

mirroring data from a primary storage device at a first location to a secondary storage device at a second location;

taking a snapshot of the primary storage device and of the secondary storage device;

storing the primary storage device snapshot on a first snapshot volume at the first location;

storing the secondary storage device snapshot on a second snapshot volume at the second location;

updating a data structure to record backup times for the first and second snapshots and to record locations of the snapshots on the snapshot volumes;

repeating the mirroring, taking, storing the primary storage device snapshot, storing the secondary storage device snapshot, and updating so as to store multiple generations of snapshots;

selecting a snapshot to use to restore data to the primary storage device;

determining if the selected snapshot is stored at the first location;

if the selected snapshot is stored at the first location, restoring data to the primary storage device using the selected snapshot generation at the first location;

if the selected snapshot is not stored at the first location, synchronizing the secondary storage device with the selected snapshot generation at the second location and then restoring data to the primary storage device using data from the synchronized secondary storage device;

wherein the selecting selects a snapshot based on a user preference.

7-13. Canceled.

14. (Previously presented) A computer-readable storage medium storing program code for causing a computer to perform the steps of:

mirroring data from a primary storage device at a first location to a secondary storage device at a second location;

taking a snapshot of the primary storage device and of the secondary storage device;
storing the primary storage device snapshot on a first snapshot volume at the first location;
storing the secondary storage device snapshot on a second snapshot volume at the second location;

updating a data structure to record backup times for the first and second snapshots and to record locations of the snapshots on the snapshot volumes;

repeating the mirroring, taking, storing the primary storage device snapshot, storing the secondary storage device snapshot, and updating steps so as to store multiple generations of snapshots;

selecting a snapshot to use to restore data to the primary storage device;

determining if the selected snapshot is stored at the first location;

if the selected snapshot is stored at the first location, restoring data to the primary storage device using the selected snapshot generation at the first location;

if the selected snapshot is not stored at the first location, synchronizing the secondary storage device with the selected snapshot generation at the second location and then restoring data to the primary storage device using data from the synchronized secondary storage device;

wherein the selecting selects a snapshot based on a user preference.

15-19. Canceled.

20. (Original) A method of backing up a first logical volume in a first storage subsystem to a second storage subsystem connected to the first storage subsystem via a path, the method comprising the steps of:

providing a second logical volume, a third logical volume, and a fourth logical volume in the second storage subsystem, the second logical volume being a copied logical volume of the first logical volume, the first and second logical volumes being in synch state, the third and fourth logical volumes being copied logical volumes of the second logical volumes, the second, the third and the fourth logical volumes being in synch state, and

splitting the second logical volume from the first logical volume,

splitting the third logical volume from the second logical volume,

synchronizing the second logical volume with the first logical volume,
splitting the second logical volume from the first logical volume,
splitting the fourth logical volume from the second logical volume, and
synchronizing the second logical volume with the first logical volume.

21-22. Canceled.

Please add claims 23 and 24 as follows:

23. (New) A system, comprising:

means for mirroring data from a primary storage device at a first location to a secondary storage device at a second location;

means for taking a snapshot of the primary storage device and of the secondary storage device;

means for storing the primary storage device snapshot on a first snapshot volume at the first location;

means for storing the secondary storage device snapshot on a second snapshot volume at the second location;

means for updating a data structure to record backup times for the first and second snapshots and to record locations of the snapshots on the snapshot volumes;

means for repeating the mirroring, taking, storing the primary storage device snapshot, storing the secondary storage device snapshot, and updating so as to store multiple generations of snapshots;

means for selecting based on a user preference a snapshot to use to restore data to the primary storage device;

means for determining if the selected snapshot is stored at the first location;

means for, if the selected snapshot is stored at the first location, restoring data to the primary storage device using the selected snapshot generation at the first location; and

means for, if the selected snapshot is not stored at the first location, synchronizing the secondary storage device with the selected snapshot generation at the second location and then

restoring data to the primary storage device using data from the synchronized secondary storage device.

24. (New) A system for backing up a first logical volume in a first storage subsystem to a second storage subsystem connected to the first storage subsystem via a path, the system comprising:

a second logical volume, a third logical volume, and a fourth logical volume in the second storage subsystem, the second logical volume being a copied logical volume of the first logical volume, the first and second logical volumes being in synch state, the third and fourth logical volumes being copied logical volumes of the second logical volumes, the second, the third and the fourth logical volumes being in synch state, and

means for splitting the second logical volume from the first logical volume,
means for splitting the third logical volume from the second logical volume,
means for synchronizing the second logical volume with the first logical volume,
means for splitting the second logical volume from the first logical volume,
means for splitting the fourth logical volume from the second logical volume, and
means for synchronizing the second logical volume with the first logical volume.